

ZERO BEAT

HAMPDEN COUNTY RADIO ASSOCIATION, INC.

Springfield, Mass.

ARRL Affiliated, 31st Year

December, 1980

ARE YOU READY FOR THE NEW YEAR ?

YOUR CLUB'S 1981 schedule

- January 9 STU LEELAND
From the league will talk
on his column, HINTS &
KINKS.
- February 6 KLMM, BILL POELLMITZ
Will talk on Dx-peditions.
- March 6 N1CQ BILL SHAHEEN
Practical use of test
equipment.
- April 3 HOME BREWING
Paul Kress & Jack Lo Monaco
- May 1st FLEA MARKET
Voting for HAM OF THE YEAR
- June 5 BANQUET at Westover
Air Force Base
Election of Officers
- MARK YOUR CALENDAR AND PLAN TO BE
THERE!

CHRISTMAS PRESENTS

Is your XYL puzzled about what to buy you for Christmas? She knows that radio equipment would be the thing that would please you but she doesn't know what to get since it looks like you already have at least two of everything? Norbill's may have the answer, a gift certificate just for you. Bruce tells us that these are available. Call him for more info.

NEW EDITOR

Ray Morin, K1LCRG, has assumed the position of editor of Zero Beat on a temporary basis and will begin with this edition. All material for Zero Beat should be mailed to Ray's home at 97 Brookhaven Drive, East Longmeadow, Ma. 01028.
Tel: (413) 525 6202.

Novice Net

Anovice net has been started to give everyone a chance to sharpen their code and learn net procedures. The time is excellent and the net controls stations have promised to keep the speed down so that everyone can participate. Tune in at 8:30 P. M. EST at 3722 MHz any day Monday thru Sunday and make yourself known. If you need any info about net procedures please let me know and I will put the right info in your hands. Call Paul, W1ZKT, at 568-8291.

Watch for the HCRA raffle coming soon!!!!
Details to follow in next month's Zero Beat.

Is it time to renew your ARRL membership?
Let HCRA do it for you. For details see your Treasurer,
Greg, N1AEH

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97 Brookhaven Drive
East Longmeadow, Ma. 01028
Tel: (413) 525 6202

QSL CARDS

We have an opportunity to have QSL cards custom printed at a modest discount. The card would bear the inscription "Hampden County Radio Association" with an outline map of Massachusetts. Your call would be overlaid on the map in large letters.

If you are interested please contact Don, W1UPH, at any meeting for samples of the card and prices.

73's

The time has come for the final editorial in my suddenly abbreviated tenure as editor of Zero Beat and I find that the words to say that which should be said are not available to me. It is necessary for me to end the very enjoyable task of preparing Zero Beat each month and perhaps I should skip this editorial or quickly say goodbye and fade into the night. This would not give me the opportunity to say "Thanks", however, to all those who have helped but even "Thanks" somehow seems totally inadequate for all those who have unfailingly given their support in making Zero Beat a success. I would like to publicly thank each person individually but the list is long and I would risk skipping someone.

Perhaps the best way out is to merely go out as any ham would:

73

W1ZKT CLEAR

NOTICE

Dues should be sent to your new treasurer:

GREG STODDARD, N1AEH
15 Chestnut Circle
West Suffield, Conn. 06093

The dues schedule has been changed this year - would you believe down.

First family member	\$ 7.00/yr.
All other family members - each	\$ 5.00/yr.

Please enclose an SASE if you want a membership card returned by mail.

NECESSITY IS NOT NECESSARILY
THE MOTHER OF INVENTION

While rumaging through my junkbox one evening, I came across a box full of crystals. Not knowing which crystals were good and which were bad, I decided to build a little circuit to check them out. Noticing that one of the crystals was marked 16.000 MHz, I decided to put together a multipurpose unit which would serve as crystal checker, secondary frequency standard, and clock generator for some digital projects.

The circuit is not complicated and you don't have to write to East Oskosh to get the parts. The part of the circuit outlined by A is all that is necessary for a crystal checker. The circuit is borrowed from a frequency counter I've built and just about any crystal will cause it to oscillate. The 5-50 pf variable capacitor serves to pull the oscillator frequency for tweaking if the secondary frequency standard is to be built. To check a crystal, couple the output to a receiver capable of receiving the crystal frequency or use a frequency counter.

Now for the bells and whistles of this project. U2, or a 7493 integrated circuit is a divide by 16 counter. Using a 16 MHz crystal in the oscillator circuit and feeding it through U2 will yield a 1 MHz output on pin 11.

Not being happy with 1 MHz output, I decided to further divide the 1 MHz output by 10 and come out with a 100 KHz output. This is the purpose of U3, a 7490 which is a divide by 10 counter.

You only need to use as many integrated circuits as your output requirements and oscillator crystal dictate. By using various combinations of 7490, 7492, and 7493 Ic's, different output frequencies can be achieved with only a handful of parts.

A simple 5 volt power supply is shown. The 7805 or LM309K is a 5 volt, 1 amp regulator. All parts are available from Radio Shack and other electronics suppliers (except for the crystal).

Construction is not critical although a shielded enclosure should be used to minimize radiation of the pulse outputs.

The only piece of test equipment I used to check this unit out was a frequency counter. The output is 5 VPP and is easily coupled to other circuitry via a small capacitor, say 100 pf or so.

No claims are made for originality of this circuit. It's a combination of circuits borrowed from other projects. The Texas Instruments TTL Data Book furnished the info on the counter Ic's.

Gent, WAlCQF

(schematic on page 5)

FOR SALE

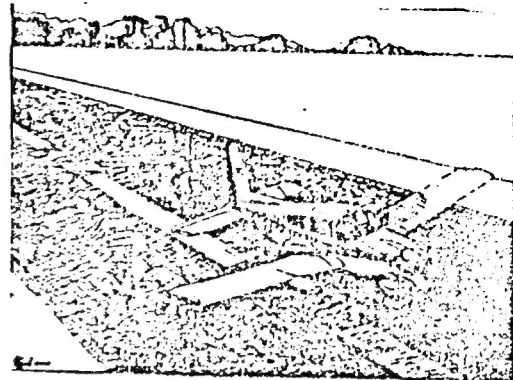
Kenwood TS 700 A (2 meter all mode) transceiver with touchtone pad, two fixed channel crystals, and with both operator's manual and service manual. In original shipping carton, mint condition, 4½ yrs old.

For price on above, call Bob, WAlVAH in Westfield at 562-9447.

FOR SALE

Two A78-13 Uniroyal studded snow tires mounted on rims. Rims fit Chevrolet Vega and Monza and similar G. M. cars with four lugs. \$45.00. Call Paul, WAlZKT, at 413/568-8291.

RESCUE! By K1BE



"Clouds, clouds, and more clouds", Stu lamented, "How could I have been so dumb!". Circling the Cherokee slowly higher, no clear patch offered escape to the ground. "Well, time to go IFR," Stu said to his wife, Mary. Nervous already, she wanted to know exactly what Stu was up to. "You're the one who had to visit your sister in Holyoke, now we're stuck above the clouds. I haven't made an instrument approach in over a year." Turning his radio to Bradley Field, he barked into the mike: "Bradley approach, this is 7394 Juliet, listening on 125.8". Nothing. Once and then twice again Stu called, and began trying other channels. "The thing is on the fritz! Stop crying, Mary, that won't fix it". Stu's clammy hands tightened on the wheel. He knew the remaining fuel would soon be gone. A blind descent through the clouds could end up by smashing into a mountain. Flying two minute legs on a triangle, he waited for Flight Service to send up a shepard to guide him in. The transponder was set to 7700. "Hope that's working", thought Stu, "My guts are wrenching themselves inside out". The fuel gauge crept down, and Stu knew he'd have to try a descent soon. What to do next?

"The Handi-talkie!", Stu shouted, "dig it out of my jacket, Mary. Turning to 34/94, Stu heard the crisp cw ID: K1ZJH/RPT followed by W1UPH chatting, and passing it on. Breaking in, Stu fought his rising panic and called: "MAYDAY, MAYDAY, MAYDAY, this is K8SJ, trapped above the clouds with all radios out. My fuel is running low, and I require an immediate instrument approach to the nearest airport. Can someone contact flight service?" Through the garbled doubling and tripling replies, one call was understood. "K8SJ this is K1YQQ, calling them now." Chet got Bradley FSS on the landline and advised them of the problem. "K8SJ this is K1YQQ, they've got you on radar, your transponder is out. They want to know your altitude and remaining fuel?"...KERCHUNK..."7,000 and 45 minutes request immediate vector to nearest airport, I repeat"...Chet relayed this and replied: "Turn left to 230 degrees, begin slow descent, approach control at Westover being notified"...KERCHUNK... Stu began his descent and tried to calm himself as clouds wrapped the plane in mists. "K8SJ, K1YQQ turn right 330 degrees, Westover has you on its' scope"... "Roger K8SJ". Chet wondered how this pilot felt, bringing his plane in by instructions slowly passed by unknown friends.

"K8SJ this is K1YQQ, a corridor has been cleared for your Westover approach. Ceiling of 800 feet, visibility two miles in rain. You're doing fine, just keep taking it nice and slow"... Misty hands seemed to be grabbing at Stu outside the windshield, and winds buffeted him from side to side..." Turn to 320 degrees, descend to 1200 feet"...KERCHUNK...K8SJ K1YQQ, I say again, turn to 320 and descend to 1200 feet"...THE PLANE'S DIVING TO THE RIGHT, NO THE LEFT, I CAN'T KEEP IT STRAIGHT!..Trust your instruments, Stu, trust the instruments, you're disoriented—K8SJ, K1YQQ, come in please.....Where had he gone?????"

"Chet, we've lost him on the radar about three miles out", flight service quietly said. Chet wanted to know if he'd crashed. "Most likely", they replied, "we're sending the teams out now". Chet hung up the phone and cleared the repeater. He just didn't want to talk to anyone.

(Please see card on page 5)

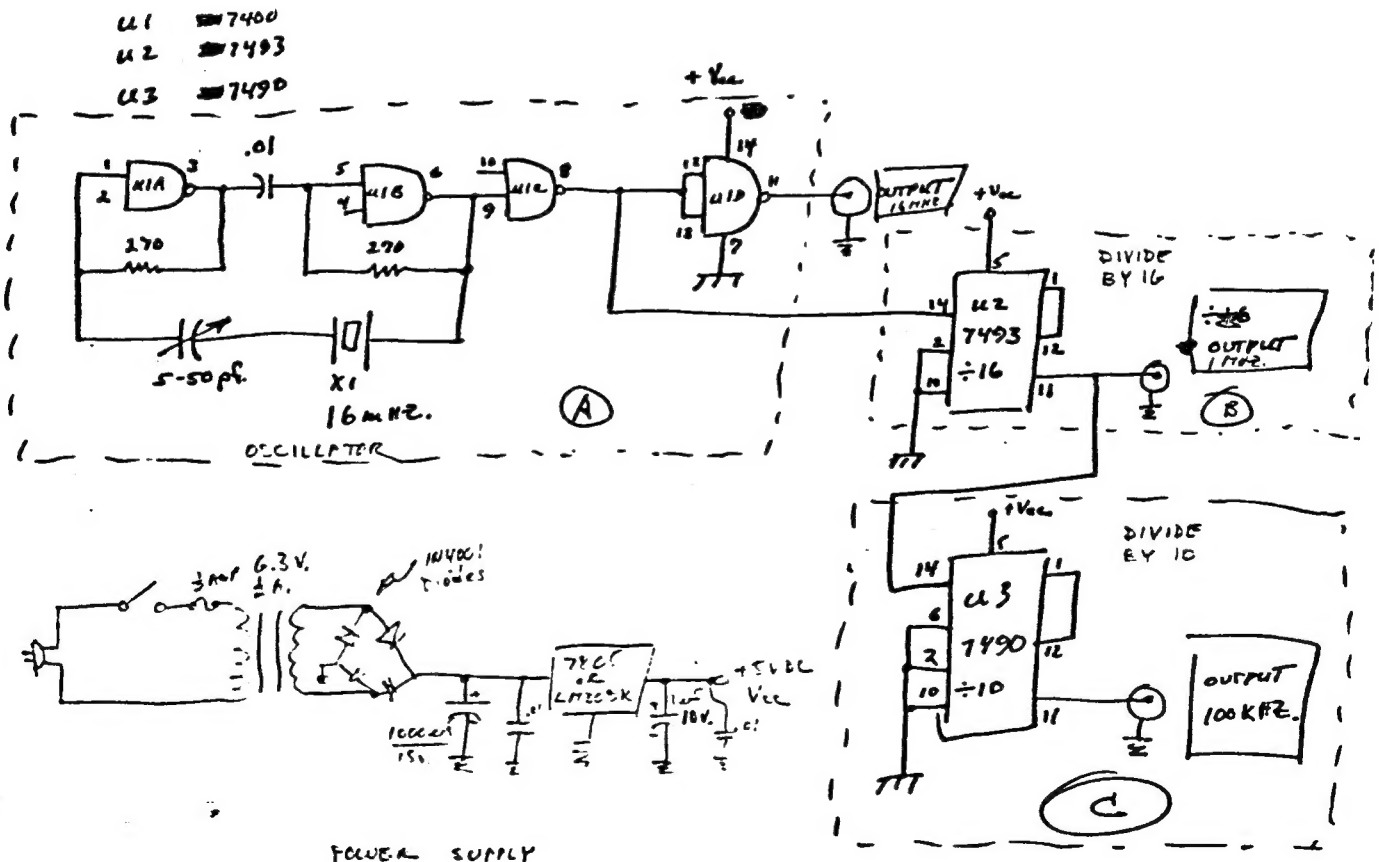
Thank You

Dear CHESTER,

THANK YOU FOR YOUR HELP WHEN I
RAN INTO TROUBLE. WE CAME OUT OF
THE CLOUDS IN A RIGHT TURNING
DIVE. I FIARED AND LEVELLED OUT,
CUT THE ENGINE, AND ROLLED OUT.
I NEVER SAW THE FARMER'S FENCE AND
RUINED MY ELLERKEE. MY BROKEN
LEG AND RIBS ARE HEALING FAST.
MANY TNA TO ALL WHO SENT CARDS

73
STU K8SJ

Necessity is not necessarily the mother of invention.....
(Continued from page 3)



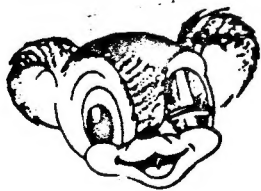
ON PASSING 13 WPM...

The FCC has now gone to a new code test which requires you to fill in the blank with the missing word. A typical (?) ham QSO is sent, with almost no repetition. You have to have it 80% correct, with at least one requiring two words to complete. No matter how the FCC tests us, we still hear the same complaints.

Any test is too hard if you aren't ready to pass it. It's common for Joe Eager-beaver to get to a so-so 13 wpm, rush down to Boston, and fall on his face. I did it that way! So, some advice: Don't go to Boston until you're copying WIAW's 18 wpm bulletins solid! You need that margin of error for nervousness, bad acoustics, and the FCC tape quality. Get to the examination room early so you feel comfortable there. Don't copy the other tests, 20 wpm may be sent first. Do copy the series of "V"s to get your hand moving. Train early on to write very small. Never block print, especially BIG block printing. Learn to take a rest during common words like "the", "and".

Sending exams are no longer given, except when you're passing 5 wpm the first time. (Someone's not already a novice and passes technician.) The written exam is new but is supposed to be more straight forward. If someone who's taken it wants to tell us the format, (not the questions), and what they thought of it, write. If you pass the general, no matter how tired/elated you are, go for a try at the advanced exam. You'll have an idea of what to expect the next time and there's always the possibility that you'll PASS!

Now, about 20 wpm and amateur extra.....



"QUICK AS A WINK" PRINTING CO.
454 MAIN STREET
WEST SPRINGFIELD, MA.
TELEPHONE (413) 736-8184

* P O R S A L E * * P O R S A L

HEATH GR-78 19" COLOR TELEVISION

....Make offer

Needs 2 tubes for color sync
Needs alignment

MOTOROLA (U43MSN) VHF-HI Band Two-way Radio

...\$425 or best

30 watts
4 channel
with control head, mic, speaker
can be used on 2 meters

MOTOROLA (M01CNB) VHF-LO Band Fire Alert Radio

...\$ 75

Freq: 33.94 mc (Hartford County)
Tone alert
Many extra tone reeds included

MOTOROLA CAR TELEPHONE, PULSAR MARK VII

...\$ 1500

7 RCC channels (1,3,5,7,9,11,13)
with control head and all accessories
instruction manual
(telephone service is approx. \$30.00/month
for 60 message units)
2 years old
Excellent condition

19" EQUIPMENT CABINETS (two units)

...\$ 75 each or

These cabinets are used but not
abused!

7 FEET HxH

MOTOROLA PAGEBOY 1 VHF-HI Band TONE & VOICE PAGER

...\$ 70 or bes

can be used on 2 meters
two-tone sequential access

COLLINS (513-J) Communications receiver

...\$ 400

.5 thru 30 mc
1 kc readout
120 Vac operations
requires external speaker
excellent condition
(Signal Corps # r388/uur)

TELEPHONES

some with multiple lines (key sets)
some with special features

... Price will
INQUIRE !!

ADDO PRINTING CALCULATOR

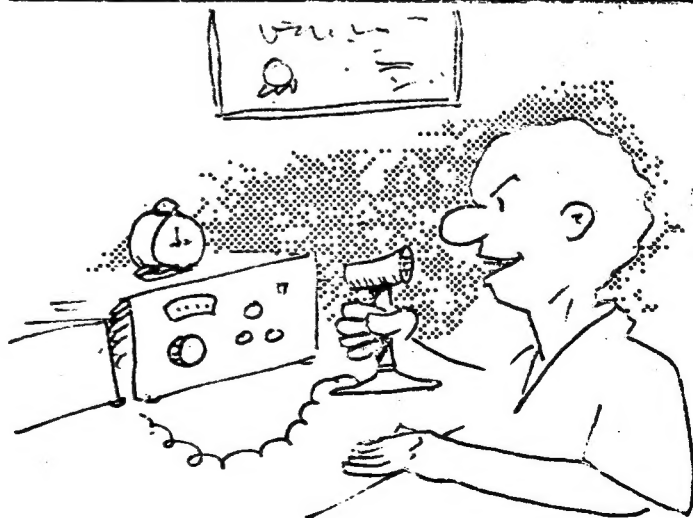
... \$ 50 or bes

CONTACT:

STEVE SHORE - WAL-ZEV (203) 243-3030 after 5 P.M.

HARMONICS

de W36QEZ



"Well, I don't know if he's the oldest ham in the club, but he's the only one who always refers to his rig as his 'wireless apparatus!'"

COMMENT By K1BE

He partied with a crowd of never-do-wells, drank himself into stupors, ate enough at one meal to feed three people, had more women in his life than a Hollywood star. As he lay dying, he deliriously kept asking, "Have I lived in vain? Have I lived in vain?"

No, he did not. For his one true passion was astronomy. His meticulous measurements of the then-known planets helped to prove the mathematics of the Copernician theory of the sun-centered solar system. Most people do seem to live in vain, never rising above a hum-drum mediocrity. Ham radio is an area where the average Joe can excel! If you aspire to, great contributions to the total knowledge of mankind are possible. So many areas of radio are not being investigated by anyone. Can television pictures be bounced off the moon? Are new modes of voice technically possible? How may new antennas be designed to take advantage of certain phenomenon? What effect would cryogenic transmission lines and antennas have on the signal? What other ways of reducing electron thermionics are feasible? The list is endless. How you see yourself in posterity is the big question.

TIDBITS

WB1DLE has his tower and beam up...
WA1ZEV bought a house...WB1EDN fighting the ham license plate fees set by the state...KA1CHI has a new 2 mtr rig...
WA1WFR trying out new computer programs...
HCRA Field Day score in November QST p. 90 was 3074 points...VHF SS is fast approaching... Southwoods magazine did a nice article about George Hughes, W1ALL...

WB1CJH and others participated with the Air Force in defense exercises...
..WB1FJK reports the new FCC fill-in-the-blank code test is more difficult...W1JP/WB1ABF have a new tower installation up...Are you going to turn your ham plates back into Massachusetts?...AC1T worked four G-DX stations on cross-band and others on DX direct during the six meter opening...
WA1RWU bought a new FT101ZD... WA1ZKT has his 2 meter transverter working now, still thinks the band is "dull"...

PRODUCT REVIEW

I recently installed a 3F35DX triband beam by TET (Tanaguchi). W1MDM had won this at the '79 Hartford convention and I bought only to let it languish in my attic all year. In '77, at the Dayton Hamfest, TET set up a booth even though they weren't selling the antennas in the U.S. yet. I was impressed and had always wanted one. The workmanship is superior, with all elements machined and drilled for ease of assembly. It is mechanically re-inforced throughout, and should survive our New England ice storms.

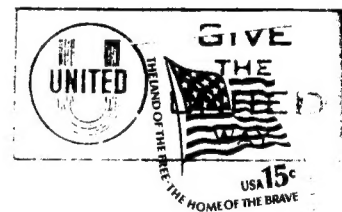
The instruction manual has a few minor flaws, but even a novice should have no trouble assembling it. Three driven elements for 10, 15, and 20 meters are interconnected without traps. Coax feds them at the 15 meter element. The director and reflector have traps to resonate at the frequency in use. TET promises an SWR of 1.2/1 or better. No baluns are used in this system, nor is there a gamma or other matching system. On 15 and 20, the SWR is flat to the band edges, where it rises to 1.1! On 10 meters it is 1.5 at the low band edge, flat through the middle, rising to 2 at the top edge. I was amazed to say the least! Seems to get out well with good signal reports. During the CQ Worldwide DX contest, I got on just to test the antenna. In moderate pile ups, the DX station never had to be called more than twice. I would recommend the 3F35DX to everyone.

73,

K1BE

GREETINGS STATIONS

Hampden County Radio Association, Inc.
Ray Morin, KALCRG, Editor
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ZERO BEAT, December, 1980

First Class Mail

AC1T

11/81